

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A drive unit for an electric vehicle, comprising:
 - a motor;
 - an inverter supplying alternating current electric power to the motor;
 - a speed reducer reducing a revolution speed of a mechanical output of the motor, the speed reducer comprising a differential gear train distributing the mechanical output of the motor into left and right driving shafts;
 - a structural member integrally holding the motor, the inverter, and the differential gear train;
 - a first refrigerant receiving heat of at least one of the motor and the inverter and outputting the heat into the atmosphere;
 - a second refrigerant receiving heat of at least one of the motor and the speed reducer and outputting the heat to the first refrigerant, a cooling performance of the first refrigerant being higher than a cooling performance of the second refrigerant; and
 - a heat exchanger transferring the heat of the second refrigerant to the first refrigerant, the heat exchanger being integrally built in the structural member disposed at a bottom of the drive unit constituted by the motor, the inverter, and the differential gear train, and including a cooling passage through which the second refrigerant is passed and another cooling passage through which the first refrigerant is passed, the another cooling passage being disposed inside of the cooling passage through which the second refrigerant is passed, the heat exchanger further including a pan reserving the first refrigerant and the heat of the first refrigerant reserved in the pan being radiated to the second refrigerant.

2. (Original) The drive unit as claimed in claim 1, wherein the motor, the inverter and the speed reducer are aligned on an axis, the first refrigerant cooling the inverter, and the second refrigerant cooling at least one of the motor and the speed reducer.

3. (Original) The drive unit as claimed in claim 1, wherein the motor, the inverter and the speed reducer are aligned on an axis, the first refrigerant cooling the inverter, and the second refrigerant cooling the motor and the speed reducer.

4. (Original) The drive unit as claimed in claim 1, wherein the motor, the inverter and the speed reducer are aligned on an axis, the first refrigerant cooling a stator coil of the motor and the inverter, and the second refrigerant cooling a motor shaft of the motor and the speed reducer.

5. (Original) The drive unit as claimed in claim 1, wherein the motor and the speed reducer are aligned on an axis, the inverter being disposed in parallel with the motor, the first refrigerant cooling the inverter, and the second refrigerant cooling the motor.

6. (Original) The drive unit as claimed in claim 1, wherein the motor and the speed reducer are aligned on an axis, the inverter being disposed in parallel with the motor, the first refrigerant cooling a stator coil of the motor and the inverter, and the second refrigerant cooling at least one of a motor shaft of the motor and the speed reducer.

7. (Original) The drive unit as claimed in claim 1, wherein the motor and the speed reducer are aligned on an axis, the inverter being disposed in parallel with the motor, the first refrigerant cooling the inverter, and the second refrigerant cooling the motor and the speed reducer.

8. (Original) The drive unit as claimed in claim 1, further comprising a heat radiating section disposed outside of the structural member, the heat radiating section radiating the heat of the first refrigerant into the atmosphere.

9. (Original) The drive unit as claimed in claim 1, wherein the heat exchanger is integrally assembled with the motor, the inverter and the speed reducer through a structural member.

10. (Original) The drive unit as claimed in claim 1, wherein the heat exchanger is integrally assembled at a lower portion of the motor and the speed reducer through a structural member.

11. (Original) The drive unit as claimed in claim 9, wherein the heat exchanger is disposed in at least one of four corners of an imaginary rectangle circumscribed with an outer peripheral circle of the motor.

12. (Original) The drive unit as claimed in claim 1, wherein the heat exchanger is disposed between the motor and the inverter and is aligned with the motor and the inverter.

13. (Previously Presented) The drive unit as claimed in claim 12, wherein the heat exchanger functions as the structural member.

14. (Original) The drive unit as claimed in claim 1, wherein the motor is disposed adjacent to the speed reducer.

15. (Original) The drive unit as claimed in claim 1, wherein the heat exchanger comprises a sump for receiving the second refrigerant which has received heat of at least one of the motor and the speed reducer, and a first refrigerant passage which is in contact with the second refrigerant in the sump and in which the first refrigerant flows.

16. (Original) The drive unit as claimed in claim 1, wherein the first refrigerant includes cooling water, and the second refrigerant includes oil.

17. (Currently Amended) A drive unit for an electric vehicle, comprising:
a motor;
an inverter electrically connected to the motor, the inverter supplying alternating current electric power to the motor;
a speed reducer connected to the motor, the speed reducer reducing a revolution speed of a mechanical output of the motor; and
a cooling system comprising

a first refrigerant passage in contact with at least one of the motor and the inverter,

a second refrigerant passage in contact with at least one of the motor and the speed reducer,

a heat exchanger connected to the first refrigerant passage and the second refrigerant passage and disposed at a bottom of the drive unit,

a radiating section connected to the first refrigerant passage and the heat exchanger, the radiating section configured for radiating heat into the atmosphere,

a first refrigerant for circulating in the first refrigerant passage, the heat exchanger, and the radiating section, the first refrigerant receiving heat at the first refrigerant passage and the heat exchanger and radiating the heat at the radiating section,

a second refrigerant for circulating in the second refrigerant passage and the heat exchanger, the second refrigerant receiving heat at the second refrigerant passage and radiating the heat at the heat exchanger,

wherein the first refrigerant passage is disposed inside the second refrigerant passage, and

wherein the heat exchanger is integrally assembled with the motor, the inverter, and the speed reducer through a structural member which supports the motor, the inverter, and the speed reducer, and the heat exchanger is disposed under the motor and the speed reducer, the heat exchanger comprises a sump for receiving the second refrigerant which has received heat of at least one of the motor and the speed reducer, and a first refrigerant passage which is in contact with the second refrigerant in the sump and in which the first refrigerant flows, the heat exchanger further including a pan reserving the first refrigerant and the heat of the first refrigerant reserved in the pan being radiated to the second refrigerant.

18. (Previously Presented) The drive unit as claimed in claim 17, wherein the second refrigerant passage includes surfaces of gears of the speed reducer.